

**CLAIMS:**

1. A power supply system for a machine having a plurality of components, comprising:
  - 5 a power source;
  - a set of two or more voltage converters connected in parallel and coupled to the power source via a common bus; and
  - an electrical supply line coupled to an output of the set of voltage converters for supplying a required voltage to the components of the machine
- 10 connected to the electrical supply line.
2. A system as claimed in claim 1, including a power factor correction system coupled between the power source and the voltage converters.
- 15 3. A system as claimed in claim 2, wherein the power factor correction system comprises a plurality of power factor correction devices connected in parallel.
4. A system as claimed in claim 3, wherein the power factor correction
- 20 device includes an AC/DC rectifier.
5. A system as claimed in claim 1, wherein the voltage converters comprise DC/DC converters.
- 25 6. A system as claimed in claim 1, wherein the voltage of the common bus is within the range of 300 – 400V.
7. A system as claimed in claim 1, wherein two or more of the voltage converters are connected in series.
- 30 8. A system as claimed in claim 7, including a switching module associated with each voltage converter for interchangeably configuring a voltage converter with another voltage converter in series or in parallel.

9. A system as claimed in claim 1, including an additional voltage converter connected in parallel to the voltage converters for providing an output current that is higher than a current required by the components connected to the electrical supply line.

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10. A system as claimed in claim 1, including a second electrical supply line requiring a different voltage from the electrical supply line that is coupled to the voltage converters for supplying current to another set of components of the machine.

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11. A system as claimed in claim 1, including a separate set of voltage converters coupled to the power source for supplying one or more logic voltages to the machine.

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12. A system as claimed in claim 11, wherein the separate set of voltage converters are connected in parallel.

13. A system as claimed in claim 1, wherein the voltage converters comprise AC/DC converters with isolators.

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14. A system as claimed in claim 1, including a line filter coupled between the power source and voltage converter for reducing noise from the system.

15. A system as claimed in claim 1, wherein the set of voltage converters is configured to detachably receive additional voltage converters for coupling to the power source and electrical supply line.

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16. A system as claimed in claim 1, wherein an output voltage of each voltage converter is greater than 48V.

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17. A system as claimed in claim 1, wherein the power consumption of the machine is in the range of 600W to 4,000W.

18. A system as claimed in claim 1, wherein the machine is one used for semiconductor assembly.

5 19. A method of providing a power supply to a machine having a plurality of components, comprising the steps of:

coupling a set of two or more voltage converters connected in parallel to a power source via a common bus;

coupling an electrical supply line to an output of the set of voltage converters; and

10 connecting the components to the electrical supply line.

20. A method as claimed in claim 19, including the step of coupling a power factor correction system between the power source and the voltage converters.

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21. A method as claimed in claim 20, wherein the power factor correction system comprises a plurality of power factor correction devices connected in parallel.

20 22. A method as claimed in claim 20, wherein the power factor correction devices includes an AC/DC rectifier.

23. A method as claimed in claim 19, wherein the voltage converters comprise DC/DC converters.

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24. A method as claimed in claim 19, including connecting two or more of the voltage converters in series.

25. A method as claimed in claim 24, including interchangeably configuring  
30 a voltage converter with another voltage converter in series or in parallel according to a voltage required by the electrical supply line.

26. A method as claimed in claim 19, including coupling a second electrical supply line to the voltage converters for supplying current to another set of components of the machine.
- 5 27. A method as claimed in claim 19, including coupling a separate set of voltage converters to the power source for supplying one or more logic voltages to the machine.
28. A method as claimed in claim 27, wherein the voltage converters are  
10 connected in parallel.
29. A method as claimed in claim 19, wherein the voltage converters comprise AC/DC converters with isolators.
- 15 30. A method as claimed in claim 19, wherein the power consumption of the machine is in the range of 600W to 4,000W.